

Title (en)

Non-volatile memory memory arrays and methods of operating thereof

Title (de)

Nichtflüchtige Speicherzellen, Speicherarrays damit und Verfahren zum Betrieb der Zellen und Arrays

Title (fr)

Cellules de mémoire non volatile, réseau de mémoire comportant celles-ci et procédés de fonctionnement des cellules et des réseaux

Publication

EP 2320426 B1 20120523 (EN)

Application

EP 10184084 A 20060103

Priority

- EP 06000064 A 20060103
- US 64022905 P 20050103

Abstract (en)

[origin: EP1677311A1] Memory cells comprising: a semiconductor substrate having a source region and a drain region disposed below a surface of the substrate and separated by a channel region; a tunnel dielectric structure disposed above the channel region, the tunnel dielectric structure comprising at least one layer having a small hole-tunnelling-barrier height; a charge storage layer disposed above the tunnel dielectric structure; an insulating layer disposed above the charge storage layer; and a gate electrode disposed above the insulating layer are described along with arrays thereof and methods of operation. For example, the tunnel dielectric structure could be an ONO (oxide/nitride/oxide) layer with the nitride layer having the small hole-tunnelling-barrier height. Together with a nitride layer as storage layer, an ONONO structure is provided.

IPC 8 full level

G11C 16/04 (2006.01); **H10B 20/00** (2023.01); **H10B 69/00** (2023.01)

CPC (source: EP)

G11C 16/0466 (2013.01); **H10B 43/30** (2023.02); **H10B 69/00** (2023.02)

Cited by

DE102016124968A1; US10566426B2; DE102016124968B4

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 1677311 A1 20060705; **EP 1677311 B1 20101215**; CN 100495733 C 20090603; CN 100539194 C 20090909; CN 101546784 A 20090930; CN 101604706 A 20091216; CN 101604706 B 20160316; CN 1828944 A 20060906; CN 1828944 B 20111228; CN 1841782 A 20061004; CN 1848457 A 20061018; CN 1862837 A 20061115; CN 1862837 B 20110119; DE 602006018807 D1 20110127; EP 2320426 A1 20110511; EP 2320426 B1 20120523; TW 200629574 A 20060816; TW I306669 B 20090221

DOCDB simple family (application)

EP 06000064 A 20060103; CN 200610000202 A 20060104; CN 200610000203 A 20060104; CN 200610000204 A 20060104; CN 200610000205 A 20060104; CN 200910006934 A 20060104; CN 200910006935 A 20060104; DE 602006018807 T 20060103; EP 10184084 A 20060103; TW 95100246 A 20060103